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CLAIMS

What is claimed is:

- 1 1. An implant for replacing the proximal portion of a femur having a substantially intact natural
2 femoral neck and a lateral side opposite the femoral neck, the implant comprising:
3 a solid body member having a longitudinal axis, a distal end, and a proximal end, being
4 configured for positioning, in use, in the natural femoral neck;
5 a head member having a distal end and a proximal substantially-spherical portion
6 configured for positioning in a natural or prosthetic hip socket;
7 a joining member positioned between the distal end of the head member and the proximal
8 end of the body member; and
9 a fastener for insertion, in use, between the distal end of the body member and the
10 exterior of the lateral side of the femur, substantially in line with the longitudinal axis
11 of the solid body member,
12 wherein no other fasteners pass within or through the femur .
- 1 2. The implant of claim 1, wherein the solid body member has a length for positioning, in use,
2 in the natural femoral neck without passage of the distal end through the lateral side of the
3 femur.
- 1 3. The implant of claim 1, wherein the body member comprises a collar positioned at the
2 proximal end of the body member and configured for abutting contact, in use, with a
3 proximal surface of the resected femoral neck.
- 1 4. The implant of claim 1 wherein the body member, the head member, and the joining member
2 are integrally attached.

- 1 5. The implant of claim 1 wherein the body member and the joining member are an integral
2 unit.
- 1 6. The implant of claim 1 wherein the joining member comprises at least one morse-tapered
2 portion.
- 1 7. The implant of claim 1 wherein the joining member comprises a first morse-tapered portion
2 which extends into a cavity in the head member and a second morse-tapered portion which
3 extends into a cavity in the solid body member, both of the morse-tapered portions extending
4 in substantial coaxial alignment relative to the longitudinal axis of the body member.
- 1 8. The implant of claim 1 wherein the body member, the head member, and the joining member
2 are separable modular components.
- 1 9. The implant recited in claim 1 wherein the fastener comprises a barrel nut located at the
2 exterior lateral side of the femur and a compression screw extending between the solid body
3 member and the barrel nut.
- 1 10. The implant recited in claim 1 wherein the fastener comprises compression screw extending
2 between the exterior lateral side of the femur and the solid body member.
- 1 11. The implant of claim 1 further comprising a first surface coating on at least a portion of the
2 body member for promoting bone ingrowth into the coating following implantation.
- 1 12. The implant of claim 1, wherein the distal end of the solid body member is configured to
2 connect with the fastener.

- 1 13. The implant of claim 1 further comprising a body extension member which extends from the
2 distal end of the solid body member at least partially along the fastener, and which is in
3 substantial coaxial alignment relative to the longitudinal axis of the body member.
- 1 14. The implant of claim 1 wherein at least a portion of the body member is triangular in cross
2 section.
- 1 15. The implant of claim 1 wherein at least a portion of the body member is fluted in cross
2 section.
- 1 16. The implant of claim 1 wherein at least a portion of the body member is scalloped in cross
2 section.
- 1 17. The implant of claim 1 wherein at least a portion of the body member is substantially circular
2 in cross section.
- 3 18. The implant of claim 1 wherein at least a portion of the body member is oval in cross section.
- 4 19. The implant of claim 1 wherein no additional support member is attached to the lateral side
5 of the femur.